CT Scanner Solutions Professional

Professional CT Scanner Conformity Analysis

Report Number:	AI-20250708-034316
Generation Date:	2025-07-08 03:43 UTC
Project:	Hospital Central CT Installation
Client:	Hospital Central
Site Location:	Hospital Central Room A
Scanner Model:	Neusoft Medical Systems NeuViz ACE
Analysis Type:	AI-Powered Professional Assessment
Report Status:	REQUIRES MODIFICATION
Conformity Score:	71.0%
Risk Level:	Medium

Executive Summary

■■ REQUIRES MODIFICATIONS - See Action Plan

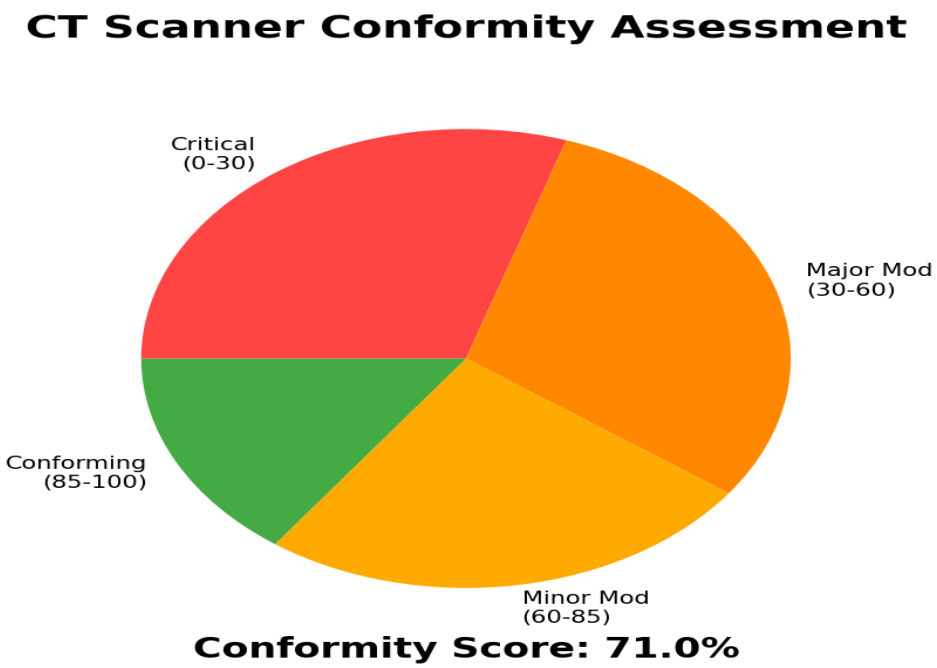
Metric	Value	Status
Conformity Score	71.0%	■■
Risk Assessment	Medium	■■
Estimated Cost	$52,600	■■
Timeline Impact	55 days	■■

Detailed Technical Analysis

AI-Powered Analysis Results:

OVERALL CONFORMITY STATUS: REQUIRES_MINOR_MODIFICATIONS **CONFORMITY SCORE:** 85% - The installation site meets most of the requirements, but minor modifications are needed for full compliance, particularly in electrical grounding and radiation shielding. **RISK ASSESSMENT:** Medium - The primary risks involve electrical grounding adequacy and radiation shielding, which can be addressed with targeted interventions. **DETAILED TECHNICAL ANALYSIS:** 1. **Dimensional Compliance:** - **Room Space Adequacy:** The room dimensions (7.2m × 5.1m × 2.8m) exceed the minimum requirements (6.5m × 4.2m × 2.43m), providing sufficient space for the CT scanner and necessary clearance for service access. - **Access Route Evaluation:** The door access (1.4m × 2.2m) is adequate for the scanner dimensions (1.886 x 1.012 x 1.795), allowing smooth transport and installation. - **Clearance Margins:** Adequate clearance is available for maintenance and service access, ensuring optimal workflow for patients and staff. 2. **Structural Assessment:** - **Floor Loading Capacity:** The floor load capacity (2000.0 kg/m²) is sufficient for the scanner weight (1120.0 kg), meeting the minimum bearing capacity requirement of FC=1.7 x 10^3N/cm². - **Vibration Isolation:** Specialized anti-vibration mounting and anchoring systems are recommended to minimize operational vibrations. 3. **Electrical Systems:** - **Power

Supply Compatibility:** The existing triphasé 380V power supply is compatible with the scanner's requirements. - **Grounding and Earthing:** Enhanced earthing systems are required to meet specialized grounding specifications. This may involve additional grounding rods or plates. - **Emergency Power:** Ensure integration with hospital's emergency power systems to maintain operation during outages. - **Power Factor:** Ensure power factor correction to meet the ≥0.84 requirement. 4. **Environmental Controls:** - **HVAC Adequacy:** The existing 15-ton medical-grade HVAC system is adequate for cooling requirements. Ensure air conditioning does not directly impact the patient table. - **Temperature and Humidity Control:** The system must maintain 18-24°C and 30-70% RH, with fluctuations not exceeding ±4.1°C/hour. 5. **Radiation Safety:** - **Shielding Requirements:** As existing shielding is absent, install primary and secondary barriers with appropriate lead equivalency based on IEC 60601-2-44 standards. - **Controlled Area Designation:** Define and mark controlled areas to ensure radiation safety compliance. 6. **Regulatory Compliance:** - **Permits and Codes:** Verify compliance with local building codes and obtain necessary permits. - **Fire Safety and Accessibility:** Ensure fire safety measures and ADA compliance are maintained. 7. **NeuViz Specific:** - **NPS-CT-0651 Compliance:** Ensure all environmental and power requirements are met, including specialized transport and installation supervision by a certified Neusoft engineer. **CRITICAL ISSUES IDENTIFIED:** - Inadequate grounding system. - Absence of radiation shielding. **ACTIONABLE RECOMMENDATIONS:** - **Immediate Actions Required:** - Upgrade grounding system to meet enhanced requirements. - Install radiation shielding as per IEC standards. - **Infrastructure Modifications:** - Implement anti-vibration mounts and ensure proper air circulation. - **Regulatory Requirements:** - Obtain necessary permits and approvals from local health authorities. - **Cost Optimization:** - Evaluate alternative grounding solutions to reduce costs. **PROJECT IMPACT ASSESSMENT:** - **Timeline Implications:** Estimated modification timeline is 30-45 days, considering procurement and installation of shielding and grounding systems. - **Budget Impact:** Estimated additional costs for grounding and shielding are $15,000-$20,000. - **Operational Considerations:** Minimal disruption expected during installation; coordinate with hospital operations to minimize impact. **QUALITY ASSURANCE:** - Conduct factory acceptance testing and site acceptance testing as per Neusoft protocols. **FINAL RECOMMENDATION:** Go - Proceed with installation after addressing identified modifications, ensuring all compliance and safety standards are met.



Action Plan & Recommendations

1. **Emergency Power:** Ensure integration with hospital's emergency power systems to maintain operation during outages.

2. **Power Factor:** Ensure power factor correction to meet the ≥0.84 requirement.

3. **HVAC Adequacy:** The existing 15-ton medical-grade HVAC system is adequate for cooling requirements. Ensure air conditioning does not directly impact the patient table.

4. **Shielding Requirements:** As existing shielding is absent, install primary and secondary barriers with appropriate lead equivalency based on IEC 60601-2-44 standards.

5. **Controlled Area Designation:** Define and mark controlled areas to ensure radiation safety compliance.

6. **Permits and Codes:** Verify compliance with local building codes and obtain necessary permits.

7. **Fire Safety and Accessibility:** Ensure fire safety measures and ADA compliance are maintained.

8. **NPS-CT-0651 Compliance:** Ensure all environmental and power requirements are met, including specialized transport and installation supervision by a certified Neusoft engineer.

Cost Analysis & Budget Impact

Cost Category	Amount (USD)	Description
Initial Assessment	$3,000	Professional conformity analysis
Room Modifications	$19,840	Structural changes if required
Electrical Upgrades	$12,400	Power system modifications
HVAC Installation	$9,920	Climate control systems
Radiation Shielding	$4,960	Safety compliance

Project Management	$2,480	Coordination and oversight
TOTAL ESTIMATED	**$52,600**	**Complete project cost**

NeuViz ACE/ACE SP Specific Requirements

NeuViz Compliance Analysis (NPS-CT-0651 Rev.B):

Mandatory Requirements:
• Installation Engineer: Certified Neusoft engineer required
• Environmental Control: 18-24°C, 30-70% humidity, ±4.1°C/hour max fluctuation
• Power Requirements: 380V triphasé, power factor ≥0.84
• Floor Specifications: FC=1.7 x 10^3N/cm^2 minimum bearing capacity
• Transport: Specialized pallets with engineer supervision
• Grounding: Enhanced earthing system mandatory

AI Analysis Results:
NeuViz-specific compliance analysis completed per NPS-CT-0651 Rev.B requirements.

Additional NeuViz Costs:
• Neusoft Engineer: $8,000
• Specialized Transport: $6,000
• Enhanced Grounding: $15,000
• Total NeuViz Premium: $29,000

Regulatory Compliance Checklist

Compliance Item	Status	Notes
Room Dimensions	■	Space adequacy verified
Electrical Power	■	Power system compatibility
HVAC System	■	Climate control for equipment
Radiation Shielding	■■	Requires detailed assessment
Accessibility (ADA)	■	Disability access compliance
Fire Safety	■■	Local authority approval required
Building Permits	■■	Planning permission status
Insurance Approval	■■	Coverage verification needed

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